Multiple Attributes for Patient Care Data: Toward a Multiaxial, Combinatorial Vocabulary

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Background. Henry and Mead[1] have proposed that to capture patient care data adequately for studies of intervention effectiveness and outcomes, multiaxial, combinatorial vocabularies are required. Simultaneously, Health Level 7 (HL7) has released standards for patient care data[2] that accommodate the need for multiaxial, combinatorial vocabularies by defining detailed elements of a patient problem message, a patient goal message, and a patient plan message and by specifying how these elements can be combined. These events raise a question: Can terms commonly used by nurses and other non-physicians to record patient care be readily structured into a multiaxial, combinatorial vocabulary?

That question begs another: Does an existing multiaxial, combinatorial vocabulary, i.e., SNOMED International[3], already contain a comprehensive set of patient care terms? At least two evaluations[4,5] have shown that although SNOMED contains many terms commonly used by nurses, many others are absent. By contrast, the Patient Care Data Set[6], under development by this author since 1992, has been shown to contain virtually all of the terms nurses use in acute care settings to record patient problems, patient care actions, and expected patient outcomes[6,7]. It has not, however, been structured as a multiaxial, combinatorial vocabulary. What revisions to the data dictionary would be necessary to conform simultaneously to the criteria of such a vocabulary and to the newly released HL7 standards?

Relationship of the Patient Care Data Set to HL7 Standards. HL7 standards[2] define elements and related attributes for patient problems, therapeutic goals, orders, and pathways. With modest revisions to the data dictionary, the Patient Care Data Set elements for patient problems, expected patient outcomes, and patient care actions can conform to the HL7 standards. They can then be used in conjunction with the HL7 attributes with accepted standard definitions and codes.

Toward a Multiaxial, Combinatorial Vocabulary. HL7 provides definitions of elements and rules for combining them as a multiaxial, combinatorial vocabulary. In combination with other elements and relationships defined by HL7, the Patient Care Data Set may offer the kind of vocabulary needed to capture patient care data for the support and improvement of professional practice.

References

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